

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number
WO 2005/053064 A1

(51) International Patent Classification⁷:

H01M 4/04

(74) Agent: PARK, Yong-Soon; 2nd Floor No.201 Namdo Bldg., 823-24, Yeoksam-dong, Kangnam-gu, Seoul 135-933 (KR).

(21) International Application Number:

PCT/KR2004/002980

(22) International Filing Date:

17 November 2004 (17.11.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10-2003-0084702

26 November 2003 (26.11.2003) KR

(71) Applicant (for all designated States except US):
HANYANG HAK WON CO., LTD. [KR/KR]; #17, Haedang 1-dong, Sungdong-gu, Seoul 133-070 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SUN, Yang Kook [KR/KR]; 1018-1103 Taegang Apt. #81 Gongreung-dong, Nowon-gu, Seoul (KR). LEE, Myoung Hun [KR/KR]; 209-21, Sangdo 4-dong, Dongjak-gu, Seoul (KR). KANG, Yoon Jung [KR/KR]; 29-5, 2gu Jinsan-ri Nam-myeon, Taean-gun, Chungcheongnam-do (KR). KIM, Gil Ho [KR/KR]; #1080, Jangsa-ri Geumsan-myeon, Jinju, Gyeongsangnam-do (KR).**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/053064 A1

(54) Title: CATHODE ACTIVE MATERIAL FOR LITHIUM SECONDARY BATTERY, PROCESS FOR PREPARING THE SAME AND REACTOR FOR USE IN THE SAME PROCESS

(57) Abstract: The present invention relates to a cathode active material for a lithium secondary battery and a process for preparing the same. In accordance with the present invention, the cathode active material having a high packing density was designed and synthesized and thus provided is a cathode active material for a lithium secondary battery exhibiting structural stability such as improved characteristics for charge/discharge, service life and high-rate and thermal stability, by modifying surface of the electrode active material with amphoteric or basic compounds capable of neutralizing acid produced around the cathode active material.